

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
13 May 2004 (13.05.2004)

PCT

(10) International Publication Number  
WO 2004/040520 A1

(51) International Patent Classification<sup>7</sup>: G06T 15/10,  
15/70, G09B 9/05, 9/30

(74) Agent: OGILVY RENAULT; 1981 McGill College Avenue, Suite 1600, Montreal, Québec H3A 2Y3 (CA).

(21) International Application Number:  
PCT/CA2002/001681

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date:  
1 November 2002 (01.11.2002)

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): CAE INC. [CA/CA]; 8585 Cote de Liesse, St. Laurent, Québec H4L 4X4 (CA).

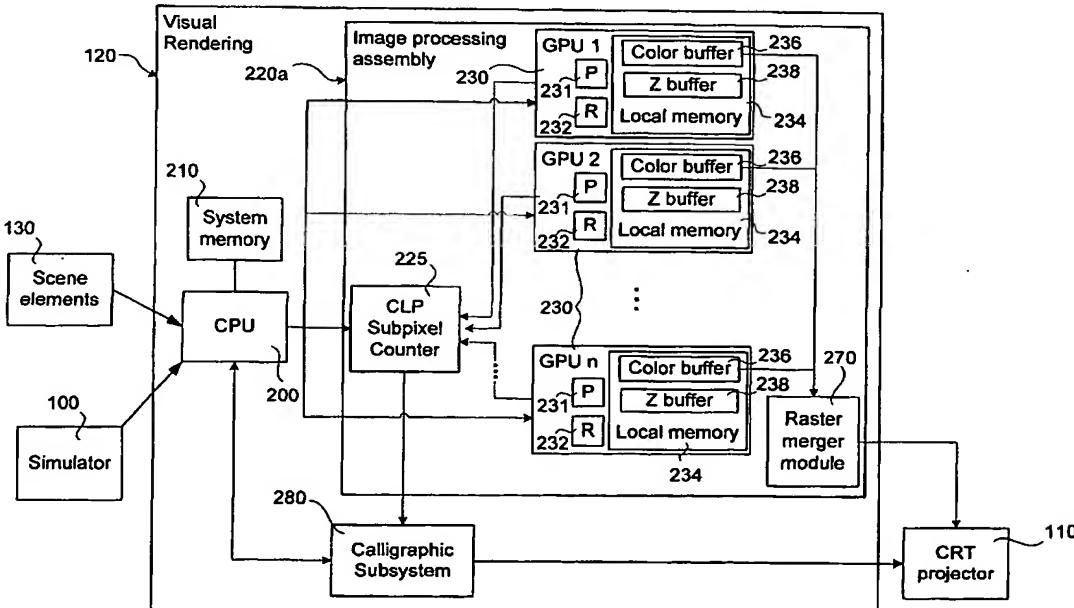
(72) Inventors; and

(75) Inventors/Applicants (for US only): PEREY, Philippe, Marcel [CA/CA]; 368 Cambridge Street, Laval, Québec H7K 3M9 (CA). GRUBER, Andrew, E. [US/US]; 215 Pleasant Street, Arlington, MA 02476 (US).

Published:  
— with international search report

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR PROVIDING CALLIGRAPHIC LIGHT POINT DISPLAY



(57) Abstract: A visual display system uses commercial graphics processing units (GPUs) to determine an occlusion of calligraphic light points (CLPs) in a visual display. A color buffer pointer address of the GPUs is changed to point to a CLP subpixel counter and color datum associated with each CLP is changed to an identifier of the respective CLPs so that an occlusion count of GPU indications can be accumulated.



*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*